CLAIMS

What is claimed is:

1. A method for universal packaging in a back-end IC manufacturing process comprising:

traversing a die-strip through a front-of-line portion of said back-end manufacturing process and a part of an end-of line portion of said back-end manufacturing process, wherein said front-of-line portion and said part of said end-of-line portion function independently of the die size of said die-strip;

accessing an electronic die-strip database stored in a computer system to determine said die size of said die-strip; and

based on said die size, cutting said die-strip into individual devices.

2. A method as described in Claim 1 further comprising sorting said individual devices, wherein said sorting is dependent on said die size.

3. A method as described in Claim 1 comprising controlling said front-of-line portion, said part of said end-of line portion, said cutting and said sorting using said computer system.

4. A method as described in Claim 1 wherein said part of said end-of-line portion comprises an automated in-line molding process and wherein said traversing comprises processing said die-strip through said automated in-line molding process that functions independently of said die size.

5. A method as described in Claim 4 wherein said part of said end-of-line portion further comprises an automated in-line solder ball attachment process and wherein said traversing further comprises processing said die-strip through said automated in-line solder ball attachment process that functions independently of said die size.

6. A method as described in Claim 5 wherein said in-line solder ball attachment process is utilized on both plastic and copper.

7. A method as described in Claim 1 wherein said cutting is performed using an integrated in-line sawing process of said end-of-line portion.

8. A method as described in Claim 1 wherein said front-of-line portion comprises an in-line die-attachment process; an in-line cure process; a first in-line plamsa process; an in-line bond process; and a second in-line plasma process and wherein said traversing comprises:

processing said die-strip through said in-line die-attachment process that functions independently of said die size;

processing said die-strip through said in-line cure process that functions independently of said die size;

processing said die-strip through said first in-line plasma process that functions independently of said die size;

processing said die-strip through said in-line bond process that functions independently of said die size; and

processing said die-strip through said second in-line plasma process that functions independently of said die size.

9. A method as described in Claim 1 further comprising traversing said individual devices through a test process and a finish assembly processes which produce taped and reeled products.

10. A method for universal packaging in a back-end IC manufacturing process comprising:

traversing a die-strip through a front-of-line portion of said back-end manufacturing process, a mold process and a solder ball attachment process, wherein said front-of-line portion, said mold process and said solder ball attachment process all function independently of the die size of said die-strip;

receiving data identifying said die size of said die-strip and storing said die size into a database.

using a computer control system to access said database to obtain said die-size; and

based on said die size, cutting said die-strip into individual devices.

11. A method as described in Claim 10 further comprising sorting said individual devices, wherein said sorting is dependent on said die size.

12. A method as described in Claim 10 wherein said processes of said front-of-line portion, said mold process and said solder ball attachment process are integrated in-line processes of said back-end manufacturing process.

13. A method as described in Claim 12 wherein said solder ball attachment process is utilized on both plastic and copper.

14. A method as described in Claim 10 wherein said cutting is performed using an integrated in-line sawing process of said end-of-line portion.

15. A method as described in Claim 10 wherein said front-of-line portion comprises an in-line die-attachment process; an in-line cure process; a first in-line

plamsa process; an in-line bond process; and a second in-line plasma process and wherein said traversing comprises:

processing said die-strip through said in-line die-attachment process that functions independently of said die size;

processing said die-strip through said in-line cure process that functions independently of said die size;

processing said die-strip through said first in-line plasma process that functions independently of said die size;

processing said die-strip through said in-line bond process that functions independently of said die size; and

processing said die-strip through said second in-line plasma process that functions independently of said die size.

16. A method as described in Claim 10 further comprising traversing said individual devices through a test process and finish assembly processes which produce taped and reeled products.

17. A universal packaging system for back-end manufacturing of ICs comprising:

a front-of-line portion for receiving a die-strip and for processing said die-strip using a first plurality of processes that function independently of the die size of said die-strip;

a computer control system comprising a memory resident database for storing said die size of said die-strip;

a first part of an end-of-line portion for receiving said die-strip from said front-of-line portion and for processing said die-strip through a second plurality of processes that function independently of said die size; and

a sawing process for receiving said die-strip from said first part and for sawing said die-strip into individual devices based on said die size as communicated from said database.

18. A system as described in Claim 17 further comprising a sorting process for receiving said individual devices from said sawing process and for sorting said individual devices, said sawing and sorting processes being a second part of said end-of-line portion.

19. A system as described in Claim 18 wherein said computer control system controls said front-of-line portion, said first part of said end-of line portion, said cutting process and said sorting process.

20. A system as described in Claim 17 wherein said second plurality of processes of said end-of-line portion comprise an automated in-line cure process that functions independently of said die size.

21. A system as described in Claim 20 wherein said second plurality of processes of said end-of-line portion further comprise an automated in-line solder ball attachment process that functions independently of said die size.

22. A system as described in Claim 21 wherein said in-line solder ball attachment process is utilized on both plastic and copper.

23. A system as described in Claim 17 wherein said cutting process is an integrated in-line sawing process of said end-of-line portion.

24. A system as described in Claim 17 wherein said first plurality of processes of said front-of-line portion comprise:

an in-line die-attachment process that functions independently of said die size;

an in-line cure process coupled to said in-line die-attachment process, said in-line cure process functioning independently of said die size;

a first in-line plasma process coupled to said in-line cure process, said first in-line plasma process functioning independently of said die size;

an in-line bond process coupled to said first in-line plasma process, said in-line bond process functioning independently of said die size; and

a second in-line plasma process coupled to said in-line bond process, said second in-line plasma process functioning independently of said die size.

25. A system as described in Claim 17 further comprising:

a test process coupled to said end-of-line portion for electronically testing said individual devices; and

a finish assembly portion which produces taped and reeled products.

26. A universal packaging system for back-end manufacturing of ICs comprising:

a front-of-line portion for receiving a die-strip and for processing said die-strip using a plurality of in-line processes that function independently of the die size of said die-strip;

a computer control system comprising a memory resident database for storing said die size of said die-strip;

an in-line mold process and an in-line solder ball attachment process for processing said die-strip after said front-of-line portion, said in-line mold process and said in-line solder ball attachment process functioning independently of said die size; and

a sawing process for sawing said die-strip into individual devices based on said die size as communicated from said database.

27. A system as described in Claim 26 further comprising:

a sorting process for receiving said individual devices from said sawing process and for sorting said individual devices.

28. A system as described in Claim 26 wherein said plurality of in-line processes of said front-of-line portion comprise:

an die-attachment process that functions independently of said die size;

an cure process coupled to said die-attachment process, said cure process functioning independently of said die size;

a first plasma process coupled to said cure process, said first plasma process functioning independently of said die size;

an bond process coupled to said first plasma process, said bond process functioning independently of said die size; and

a second plasma process coupled to said bond process, said second plasma process functioning independently of said die size.

28. A system as described in Claim 27 further comprising:

a test process coupled to said sorting process and for electronically testing said individual devices; and

a finish assembly portion which produces taped and reeled products.